



6560-50-P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA-R05-OAR-2018-0072; FRL-9995-13-Region 5]**

**Air Plan Approval; Illinois; Sulfur Dioxide**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to approve a request submitted by the Illinois Environmental Protection Agency (IEPA) on February 6, 2018 to revise the Illinois State Implementation Plan (SIP) under the Clean Air Act (CAA) for the 2010 sulfur dioxide (SO<sub>2</sub>) National Ambient Air Quality Standard (NAAQS). IEPA is specifically requesting EPA approval to amend Illinois' SIP for the 2010 SO<sub>2</sub> NAAQS to account for two variances recently granted by the Illinois Pollution Control Board (IPCB) to Calpine Corporation (Calpine) and Exelon Generation, LLC (Exelon).

**DATES:** Comments must be received on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-R05-OAR-2018-0072 at <http://www.regulations.gov>, or via email to [blakley.pamela@epa.gov](mailto:blakley.pamela@epa.gov). For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed

from Regulations.gov. For either manner of submission, EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system). For additional submission methods, please contact the person identified in the "For Further Information Contact" section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www2.epa.gov/dockets/commenting-epa-dockets>.

**FOR FURTHER INFORMATION CONTACT:** Francisco J. Acevedo, Mobile Source Program Manager, Control Strategies Section, Air Programs Branch (AR-18J), Environmental Protection Agency, Region 5, 77 West Jackson Boulevard, Chicago, Illinois 60604, (312) 886-6061, [acevedo.francisco@epa.gov](mailto:acevedo.francisco@epa.gov).

**SUPPLEMENTARY INFORMATION:** Throughout this document whenever "we," "us," or "our" is used, we mean EPA. This supplementary information section is arranged as follows:

- I. What is the background for this action?
- II. What changes have been made as part of the SIP revision?
- III. What is EPA's analysis of the state's submittal?
- IV. What action is EPA taking?
- V. Incorporation by reference.
- VI. Statutory and Executive Order reviews.

**I. What is the background for this action?**

On June 22, 2010, EPA promulgated a new 1-hour primary SO<sub>2</sub> NAAQS of 75 parts per billion (ppb), which is met at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations does not exceed 75 ppb, as determined in accordance with appendix T of 40 CFR part 50. See 75 FR 35520, codified at 40 CFR 50.17(a)-(b). On August 5, 2013, EPA designated a first set of 29 areas of the country as nonattainment for the 2010 SO<sub>2</sub> NAAQS, including the Lemont and Pekin areas within Illinois. See 78 FR 47191, codified at 40 CFR part 81, subpart C. These area designations were effective October 4, 2013. More recently, on July 12, 2016, EPA designated the Alton Township area (including part of Madison County) and the Williamson County area as additional nonattainment areas for the 2010 SO<sub>2</sub> NAAQS in Illinois. See 81 FR 45039. These area designations were effective September 12, 2016.

In conjunction with its adoption of SO<sub>2</sub> emission limits for

major sources, Illinois adopted rule revisions (Sulfur Content Rule) to limit the sulfur content of distillate and residual fuel oil combusted at stationary sources throughout the state. See 35 Ill. Adm. Code 214.161(b) (2) and 214.305(a) (2). The Sulfur Content Rule specifically requires that the sulfur content of distillate fuel oil combusted on or after January 1, 2017, not exceed 15 parts per million (ppm). The rule applies to owners and operators of existing fuel combustion emission and process emission sources that burn liquid fuel. Consistent with trends toward increasing availability and use of lower sulfur oil of all kinds, these limits were intended to assure that the considerable number of generally smaller boilers that burn these fuels use fuels with relatively low sulfur content.

Rather than imposing fuel sulfur content limitations piecemeal as additional areas are designated nonattainment, the IEPA proposed establishing such limits statewide. The new limits adopted by Illinois are intended to help protect air quality in the entire state, including the Alton Township, Lemont, Pekin, and Williamson County nonattainment areas. The limits will also assist Illinois' attainment planning efforts in future nonattainment areas and could potentially help certain areas avoid a nonattainment designation.

Illinois' Sulfur Content Rule, containing 35 Ill. Adm. Code 214.161(b) (2) and 214.305(a) (2), was submitted to EPA as a SIP

revision on March 2, 2016, and the EPA issued an approval in the Federal Register on February 1, 2018 (83 FR 4591) and May 29, 2018 (83 FR 24406).

**II. What changes have been made as part of the SIP revision?**

Exelon maintains a series of diesel fuel storage tanks at four of its nuclear generation stations for fuel that powers equipment in the event of an emergency or loss of power. The facilities must always keep a specified volume of diesel fuel on hand to power the emergency equipment and ensure nuclear safety. However, the amount of fuel actually used is low because the use of the fuel for anything other than emergencies and readiness testing is prohibited. This results in a large amount of fuel with sulfur content greater than 15 ppm being stored for long periods of time. The four stations currently have 47 emergency fuel tanks with over 700,000 gallons of diesel fuel containing sulfur ranging from 19 ppm to 211 ppm.

On May 18, 2016, Exelon filed a Petition for Variance with the IPCB regarding its Byron (Ogle County), Clinton (DeWitt County), Dresden (Grundy County), and LaSalle (LaSalle County) nuclear generation stations. See *Exelon Generation, LLC v. Illinois Environmental Protection Agency*, PCB 16-106. Exelon requested relief from the 15 ppm sulfur content limitation for distillate fuel oil set forth in 35 Ill. Adm. Code 214.161(b)(2). On September 8, 2016, the IPCB granted the

variance from January 1, 2017, to December 31, 2019, for the Byron and Dresden stations, subject to certain conditions; from January 1, 2017, to December 31, 2020, for the Clinton station, subject to certain conditions; and from January 1, 2017, to December 31, 2021, for the LaSalle station, subject to certain conditions.

Calpine owns three simple-cycle natural gas fired turbines with distillate oil as back up fuel to generate electricity in Zion, Illinois (known as "Zion Energy Center"). The Zion Energy Center is a "peaker" plant that only operates when electricity demand is high. Each turbine at the Zion Energy Center is equipped with dry low NOx combustors for natural gas firing and water injection for oil firing. The Zion Energy Center also maintains a supply of distillate oil to burn when it cannot access natural gas. The facility currently has 960,000 gallons of distillate oil with a sulfur content of 113 ppm, a mixture of ultra-low sulfur fuel (at or below 15 ppm) and fuel with higher sulfur content.

On June 16, 2016, Calpine filed a Petition for Variance with the IPCB regarding the Zion Energy Center. See Calpine Corporation (Zion Energy Center) v. Illinois Environmental Protection Agency, PCB 16-112. On August 8, 2016, Calpine filed an Amended Petition for a Variance with the IPCB, requesting relief from the 15 ppm sulfur content limitation for distillate

fuel oil set forth in 35 Ill. Adm. Code 214.161(b) (2). On November 17, 2016, the IPCB granted the variance from January 1, 2017, to December 31, 2021, subject to certain conditions.

On August 3, 2017, Calpine filed a Motion to Administratively Amend the IPCB's Order Granting a Variance to amend the IPCB's final order by replacing references to 35 Ill. Adm. Code 214.161(b) (2), which applies to fuel combustion emission units, with references to 35 Ill. Adm. Code 214.305(a) (2), which applies to process emission units, as the units subject to the variance are actually process emission units. The IPCB granted the motion on August 17, 2017, amending its order to correct the errors.

Since the petitions for variance sought relief from provisions that were approved into the Illinois SIP, such variances must be submitted to EPA for approval as SIP revisions. None of the facilities addressed in the Exelon and Calpine variances are located in or near existing SO<sub>2</sub> nonattainment areas.

### **III. What is EPA's analysis of the state's submittal?**

Our primary consideration for determining the approvability of Illinois' revision is whether approval of the Exelon and Calpine variances to the SO<sub>2</sub> SIP comply with the SO<sub>2</sub> NAAQS.

EPA can approve a SIP revision that modifies control measures in the SIP once the state makes a demonstration that

such modification will not interfere with attainment of the NAAQS, or any other CAA requirement.

#### *Exelon Variance*

Exelon considered four potential options to comply with the Sulfur Content Rule as of January 1, 2017. Such options included combusting all of the noncompliant fuel; continuing to dilute the fuel's sulfur content concentrations with ultra-low sulfur diesel (ULSD); draining all of the storage tanks and refilling them with ULSD; or draining and refilling on the larger tanks. For the proposed SIP revision, Exelon has demonstrated that none of the four compliance alternatives evaluated were practicable for meeting the 15 ppm sulfur limit by January 1, 2017 and presented a substantial hardship to the company.

Exelon explains that the facilities are required to maintain large volumes of diesel fuel to power emergency generators, auxiliary boilers (at two of the facilities), and fire pumps, equipment that Exelon collectively refers to as its "Emergency Equipment." The Nuclear Regulatory Commission (NRC) requires that the facilities maintain this equipment to be used in emergency situations, such as during power losses. See 10 CFR 50.63. The NRC also requires that the Emergency Equipment be maintained in a condition that will ensure they will startup and provide emergency power when called upon at a high degree of



readiness. Exelon explains that this "availability" requirement limits the amount of time Exelon can perform preventative maintenance on the equipment and the associated fuel tanks.

Exelon further explains that NRC regulations require that the facilities store and maintain on-site enough fuel to power the Emergency Equipment for up to seven days. Exelon indicates, if the minimum inventory is not immediately available, the plant enters a Limiting Condition for Operation (LCO) for the associated emergency engines. This threatens the pertinent station's ability to meet applicable availability and operability requirements, and if not corrected within seven days, obligates the station to begin a controlled shutdown of the affected nuclear reactor.

Exelon indicates that the federally enforceable state operating permits (FESOPs) for the facilities restrict the usage of, and emissions from, the Emergency Equipment. Similarly, some of the equipment is subject to Federal New Source Performance Standards (NSPS) for "Stationary Compression Ignition Internal Combustion Engines" (NSPS IIII, 40 CFR 60.4200) and the National Emission Standards for Hazardous Air Pollutants (NESHAP) for "Stationary Reciprocating Internal Combustion Engines" (Maximum Achievable Control Technology (MACT) ZZZZ, 40 CFR 63.6580), which also restrict the amount of time the Emergency Equipment can be operated.

Exelon explains that, in 2007 for the Byron, Dresden, and LaSalle Stations and in 2010 for the Clinton Station, it began purchasing only ultra-low sulfur fuel (i.e. fuel with sulfur content no greater than 15 ppm) to replenish any fuel depleted from the pertinent diesel fuel storage tanks. While this has resulted in the dilution of the sulfur content of the stored fuel, recent sampling of a representative number of tanks at the facilities indicates that there is fuel in the system that currently remains above 15 ppm.

Exelon's plan for complying with the Sulfur Content Rule by the end of the variance period outlined by the IPCB calls for continuing to replenish the lower sulfur tanks with ULSD; and, as part of a coordinated program, emptying the higher sulfur tanks and refiling them with ULSD.

Using sulfur concentrations equal to those from current tank samples at the facilities, Exelon estimates that it would emit a total of 0.481 more tons of SO<sub>2</sub> under the variance than if it timely complied with the Sulfur Content Rule. As Exelon replenishes the emergency tanks with ULSD, sulfur concentrations in the fuel will be reduced over time. Taking this dilution into account and using annual averages for fuel burned over the last five years, the estimated SO<sub>2</sub> emissions with the variance are 0.067 more ton per year than with compliant fuel. As the variance relief would last from three to five years, depending

on the station, Exelon estimates that it would emit a total of 0.26 ton more of SO<sub>2</sub> under the variance than if it timely complied with the Sulfur Content Rule.

IEPA does not believe that any injury to the public or environment will result from granting the variance. None of the facilities are in an SO<sub>2</sub> nonattainment area, and the estimated SO<sub>2</sub> emissions increase is negligible and extremely unlikely to impact an SO<sub>2</sub> nonattainment area. Further, IEPA has examined the locations of these facilities in comparison to areas currently being investigated and modeled for future area designation recommendations and determined that there is no overlap; IEPA therefore does not believe that the facilities will impact potential future nonattainment areas.

#### *Calpine Variance*

Calpine considered two potential options for immediate compliance with the Sulfur Content Rule. Such options included combusting all of its distillate oil before January 1, 2017; and draining the fuel from the storage tanks. For the proposed SIP revision, Calpine demonstrated that none of the compliance alternatives evaluated were practicable for meeting the 15 ppm sulfur limit by January 1, 2017 and presented a substantial hardship to the company.

Calpine argued that it cannot combust all of its distillate oil without violating its Clean Air Act Permit Program (CAAPP)

permit that was reissued on October 16, 2014 (ID NO. 097200ABB, Application No. 99110042). Under its permit, the facility may only combust distillate oil for limited purposes including when natural gas is unavailable or for shakedown, evaluation, and testing of the turbines. Calpine alleges that because the facility's turbines are expensive to operate, electricity grid operators only direct the Zion Energy Center to generate electricity when demand is high, such as during extreme weather conditions. Therefore, the facility's permit and economic conditions prevented burning the entire supply of the distillate oil supply before January 1, 2017. Additionally, Calpine also argues that draining the storage tanks would impose a substantial hardship. Draining the tanks would entail purchasing and installing new equipment and revising facility plans that safeguard fuel spills at a substantial cost. Furthermore, Calpine alleges that it is contractually obligated to maintain 12 hours of backup fuel in case of emergency, so draining the tanks would violate this obligation and risk public safety. Based on Calpine's argument, the IPCB and IEPA both determined that Calpine would suffer a substantial hardship if required to immediately comply with the Sulfur Content Rule.

Under Calpine's compliance plan, the facility would comply with the Sulfur Content Rule by January 1, 2022 by continuing to purchase only fuel with sulfur content below 15 ppm. This

ensures that the sulfur content of the fuel used at the facility will continue to decrease. During the variance period, the sulfur content of all distillate oil combusted by Calpine must not exceed 115 ppm sulfur content.

Calpine alleges that with its existing supply of distillate oil, its turbines can operate for approximately 68.6 hours (or approximately 22.8 hours of operation for each of the three turbines). With the proposed maximum sulfur content of 115 ppm for distillate oil, this operation would emit a total of 0.77 tons of SO<sub>2</sub> over the five-year term of the variance, or 0.15 tons per year (tpy). Under compliance with the Sulfur Content Rule (using only 15 ppm distillate oil), 68.6 hours of operation would yield a total of 0.10 tons of SO<sub>2</sub> emissions, or 0.02 tpy. Therefore, Calpine estimates that it would emit a total of 0.67 ton more of SO<sub>2</sub> under the variance than if it timely complied with the Sulfur Content Rule.

IEPA does not believe that any injury to the public or environment will result from granting the Calpine variance. The Zion Energy Center is not located in an SO<sub>2</sub> nonattainment area, and the estimated SO<sub>2</sub> emissions increase is negligible and extremely unlikely to impact an SO<sub>2</sub> nonattainment area. Further, IEPA has evaluated air dispersion modeling submitted by Calpine that demonstrates that even under a 115 ppm sulfur scenario, as outlined in the variance, the facility will not cause a

violation of the SO<sub>2</sub> NAAQS; IEPA therefore does not believe that the Facility will impact potential future nonattainment areas.

#### *Conclusion*

None of the facilities addressed in the SIP are in or near existing SO<sub>2</sub> nonattainment areas. EPA has no reason to believe that Illinois' revision to the Illinois SO<sub>2</sub> SIP will cause any area in Illinois to become nonattainment for the SO<sub>2</sub> NAAQS. Based on the above discussion, EPA believes that the variances granted by the IPCB will not interfere with attainment or maintenance of the SO<sub>2</sub> NAAQS in Illinois and would not interfere with any other applicable requirement of the CAA, and thus, is approvable under CAA.

#### **IV. What action is EPA taking?**

EPA is proposing to approve the revision to the Illinois SIP submitted by the IEPA on February 6, 2018, because the variances granted by the IPCB for Calpine and Exelon meet all applicable requirements and would not interfere with reasonable further progress or attainment of the SO<sub>2</sub> NAAQS.

#### **V. Incorporation by Reference.**

In this rule, EPA is finalizing regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is finalizing the incorporation by reference of the IPCB *Opinion and Order of the Board* (PCB 16-106) adopted on September 8, 2016, effective on September 13,

2016; and *Opinion and Order of the Board* (PCB 16-112) adopted on November 17, 2016, effective on December 19, 2016 and subsequently amended on August 17, 2017. EPA has made, and will continue to make, these documents generally available through [www.regulations.gov](http://www.regulations.gov), and at the EPA Region 5 Office (please contact the person identified in the "For Further Information Contact" section of this preamble for more information).

## **VI. Statutory and Executive Order Reviews.**

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Is not expected to be an Executive Order 13771 (82 FR 9339, February 2, 2017) regulatory action because this action is not significant under Executive Order 12866;

- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally



permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control,  
Incorporation by reference, Sulfur oxides.

Dated: June 3, 2019.

Cheryl L Newton,  
Acting Regional Administrator, Region 5.

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